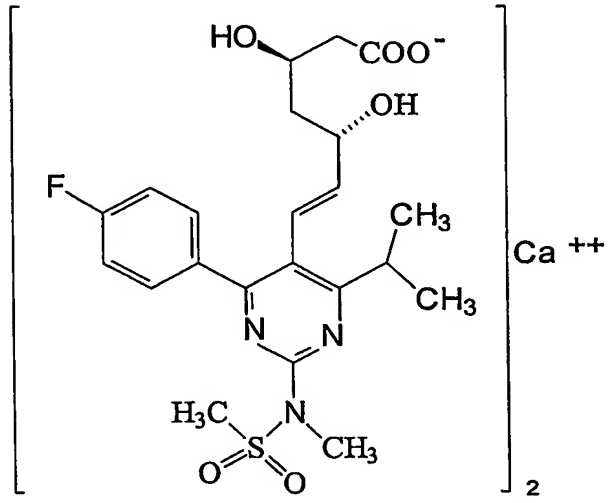
WE CLAIM:

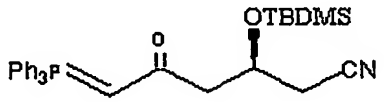
1. A process for producing rosuvastatin of structural formula I,



FORMULA I

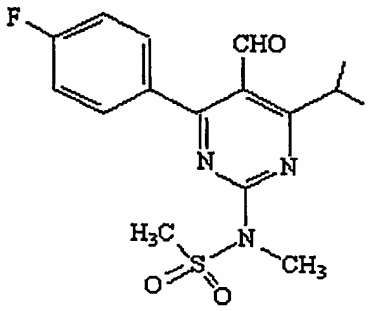
comprising :

a. condensing 1-cyano (2S)-2-[(tert-butyldimethylsilyl)oxy]-5-oxo-6-triphenylphosphanylidene hexanenitrile of structural formula II



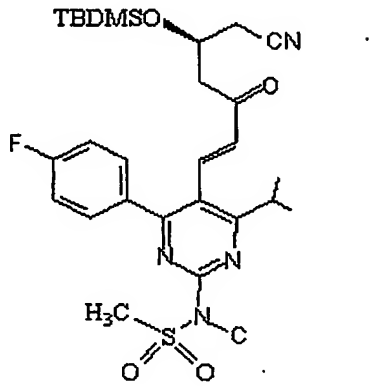
FORMULA II

with 4-(4-Fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)-5-pyrimidinecarbaldehyde of structural formula III



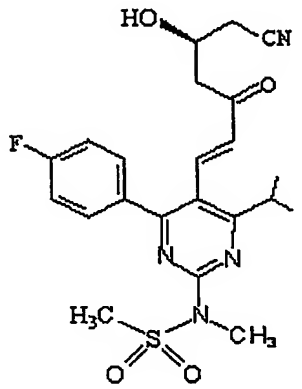
FORMULA III

to give a condensed product of structural Formula IV,



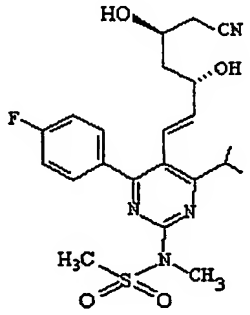
FORMULA IV

b. deprotecting the tert-butyldimethylsilyl group of the condensed product to afford a cyanoketo alcohol of structural formula V,



FORMULA V

c. reducing the cyanoketo alcohol to cyanodiol of structural formula VI, and



FORMULA VI

d. hydrolyzing the cyanodiol of structural formula VI to produce said compound of structural formula I in free acid form, or in the form of an ester or lactone thereof, or in salt form.

2. The process of claim 1 wherein step (a) is carried out in an organic solvent.

3. The process of claim 2 wherein the organic solvent is selected form the group consisting of toluene, benzene, cyclohexanes,heptanes or mixture(s) thereof.

4. The process of claim 3 wherein the organic solvent is toluene.

5. The process of claim 1 wherein step (b) is performed in an organic solvent.

6. The process of claim 5 wherein the organic solvent is selected from the group consisting of sulfolane, dioxane, dimethyl sulfoxide, dimethyl acetamide, N-methyl pyrrolidone, acetonitrile, diethyl ether, tetrahydrofuran, dimethylformamide, methanol, ethanol, propanol, and mixtures thereof.

7. The process of the claim 6 wherein the organic solvent is methanol.

8. The process of clam 1 wherein the deprotection at step (b) is performed by treating with acids or tetrabutylammonium fluoride.

9. The process of claim 8 wherein the acids are sulfonic acids, inorganic or organic acids.

10. The process of claim 9 wherein the acids are selected from the group consisting of methanesulfonic acid, trifluoromethanesulfonic acid, hydrochloric acid, sulfuric acid, nitric acid, phosphoric acid, formic acid, trifluroacetic acid, and acetic acid.

11. The process of claim 10 wherein the acid is methanesulfonic acid.

12. The process of claim 1 wherein the reduction at step c is carried out in the presence of diethylmethoxyborane and sodium borohydride.

13. The process of claim 12 wherein the reduction is performed in an organic solvent mixture comprising alcohol and non-alcoholic solvents.

14. The process of claim 13 wherein the alcohol is selected from the group consisting of methanol, ethanol, propanol and butanol.

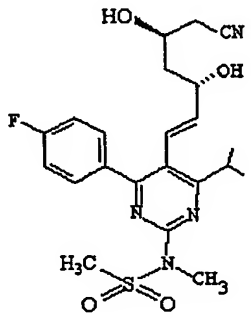
15. The process of claim 14 wherein the alcohol is methanol.

16. The process of claim 13 wherein the non-alcoholic organic solvent is selected from the group consisting of acetonitrile, diethyl ether, tetrahydrofuran and dimethylformamide.

17. The process of claim 16 wherein the non-alcoholic organic solvent is tetrahydrofuran.

18. The process of claim 1 wherein the hydrolysis at step (d) is performed after the reaction at step c is completed.

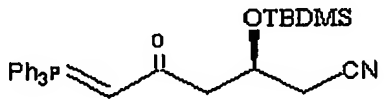
19. A process for preparing a compound of structural formula VI



FORMULA VI

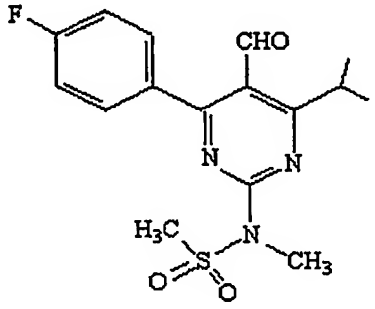
comprising:

a. condensing 1-cyano (2S)-2-[(tert-butyldimethylsilyl)oxy]-5-oxo-6-triphenylphosphanylidene hexanenitrile of structural formula II



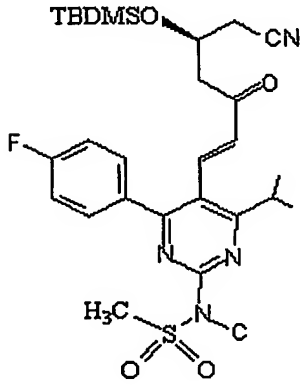
FORMULA II

with 4-(4-Fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)-5-pyrimidinecarbaldehyde of structural formula III



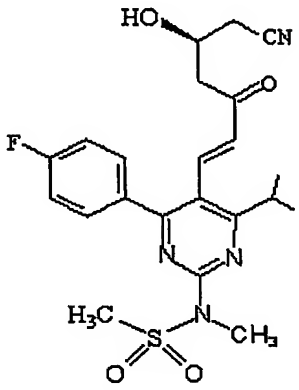
FORMULA III

to give a condensed product of structural formula IV,



FORMULA IV

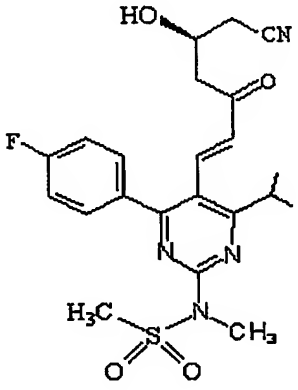
b. deprotecting the tert-butyldimethylsilyl group of the condensed product to afford a cyanoketo alcohol of structural formula V, and



FORMULA V

(c) reducing the cyanoketo alcohol of structural formula V to produce said compound of structural formula VI.

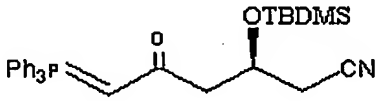
20. A process for preparing a compound of structural formula V



FORMULA V

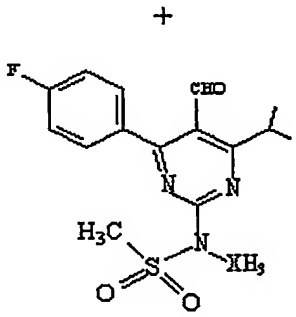
comprising:

(a) condensing 1-cyano (2S)-2-[(tert-butyldimethylsilyl)oxy]-5-oxo-6-triphenylphosphanylidene hexanenitrile of structural formula II



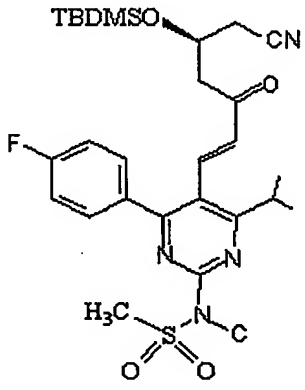
FORMULA II

with 4-(4-Fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)-5-pyrimidinecarbaldehyde of structural formula III



FORMULA III

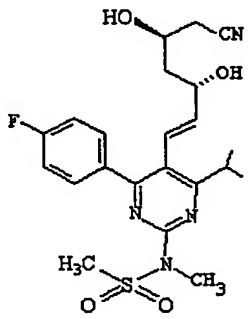
to give a condensed product of structural formula IV, and



FORMULA IV

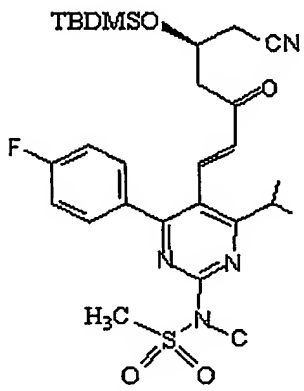
(b) deprotecting the tert-butyldimethylsilyl group of the condensed product to produce said compound of structural formula V.

21. The process of claim 20 further comprising reducing the compound of structural formula V to produce a compound of structural formula VI.



FORMULA VI

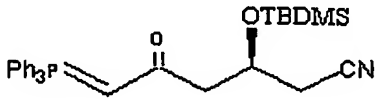
22. A process for preparing a compound of structural formula IV



FORMULA IV

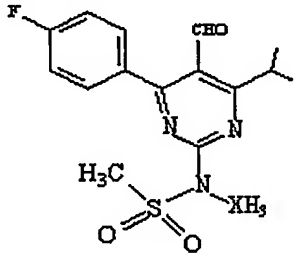
comprising:

condensing 1-cyano (2S)-2-[(tert-butyldimethylsilyl)oxy]-5-oxo-6-triphenylphosphanylidene hexanenitrile of structural formula II



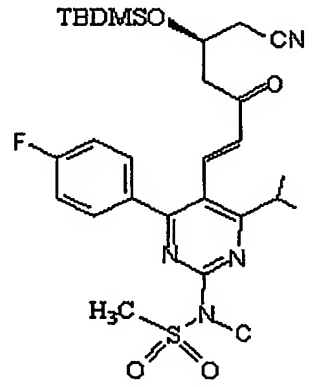
FORMULA II

with 4-(4-Fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)-5-pyrimidinecarbaldehyde of structural formula III



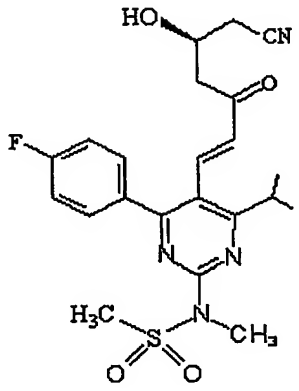
FORMULA III

to give a condensed product of structural formula IV.



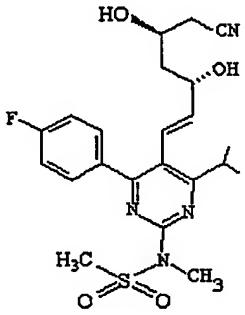
FORMULA IV

23. The process of claim 22 further comprising deprotecting the tert-butyldimethylsilyl group of the condensed product to produce a compound of structural formula V.



FORMULA V

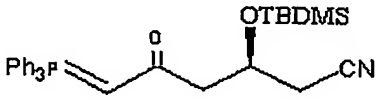
24. The process of claim 23 further comprising reducing the compound of structural formula V to produce a compound of structural formula VI.



FORMULA VI

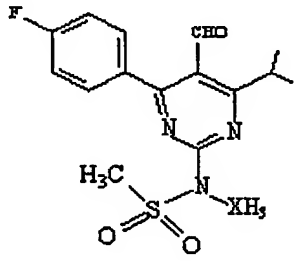
25. A process for producing rosuvastatin of structural formula I comprising:

(a) condensing 1-cyano (2S)-2-[(tert-butyldimethylsilyl)oxy]-5-oxo-6-triphenylphosphanylidene hexanenitrile of structural formula II



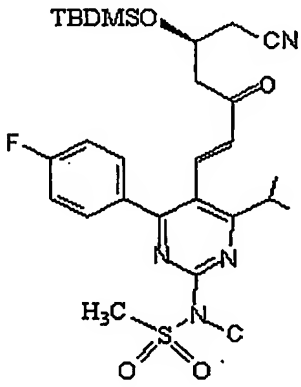
FORMULA II

with 4-(4-Fluorophenyl)-6-isopropyl-2-(N-methyl-N-methanesulfonylamino)-5-pyrimidinecarbaldehyde of structural formula III



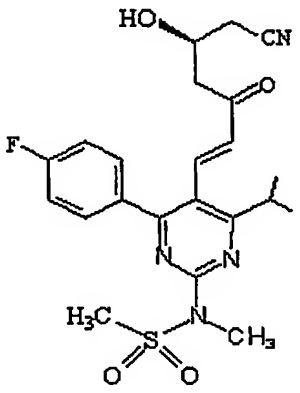
FORMULA III

to give a condensed product of structural formula IV,



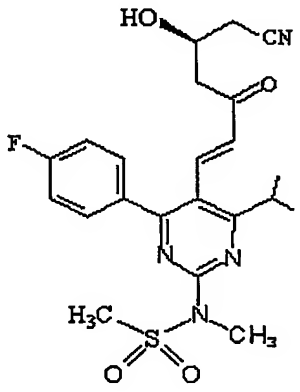
FORMULA IV

(b) esterifying the condensed product to give an ester of a compound of structural formula IX,



FORMULA IX

(c) reducing the ester to compound of structural formula X, and



Formula X

(d) hydrolyzing the compound of structural formula X to produce said compound of structural formula I in free acid form, or in the form of an ester or a lactone thereof, or in salt form.

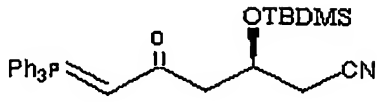
26. The process of claim 25 wherein step (a) is carried out in an organic solvent.

27. The process of claim 26 wherein the organic solvent is selected form the group consisting of toluene, benzene, cyclohexanes,heptanes or mixture(s) thereof.

28. The process of claim 27 wherein the organic solvent is toluene.

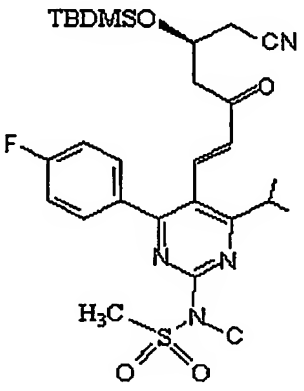
29. The process of claim 25 wherein step (b) is carried out with methanol in the presence of hydrochloric acid.

30. A compound of structural formula II.



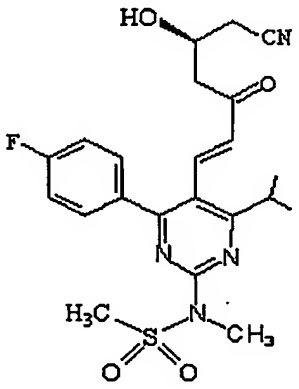
Formula II

31. A compound of structural formula IV



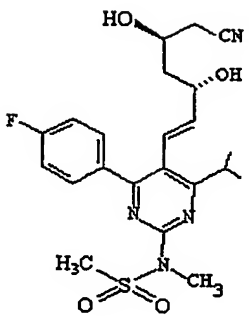
Formula IV

32. A compound of structural formula V



Formula V

33. A compound of structural formula VI



Formula VI